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30 Pages

June 1965

PHOTOGRAPHIC INTERPRETATION REPORT

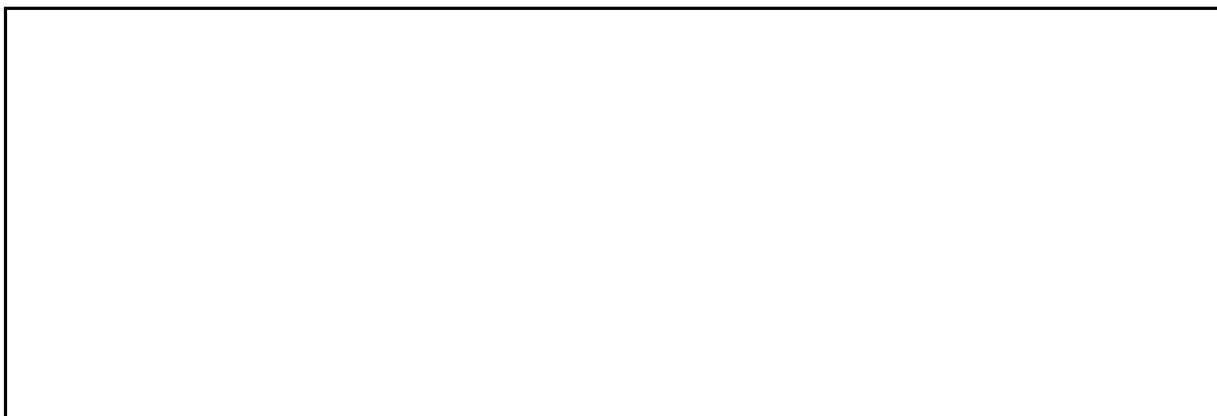
SELECTED RADAR TRACKING FACILITIES, KY/VMTC AND GULF OF FINLAND AREAS, USSR



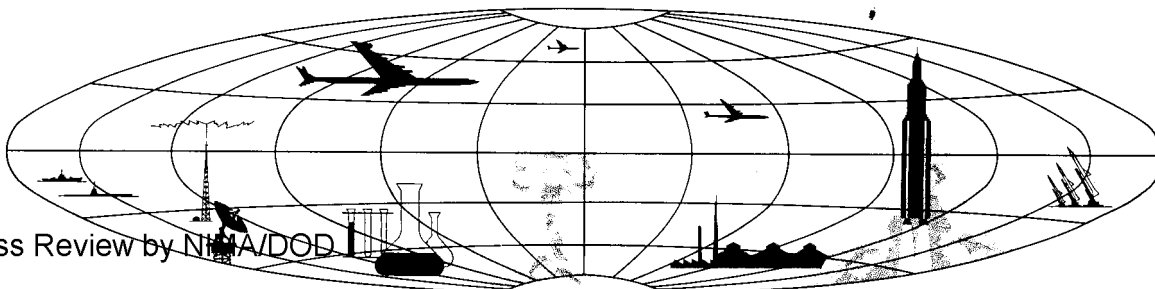
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PHOTOGRAPHIC INTERPRETATION REPORT

SELECTED RADAR TRACKING FACILITIES, KY/VMTC AND GULF OF FINLAND AREAS, USSR

June 1965

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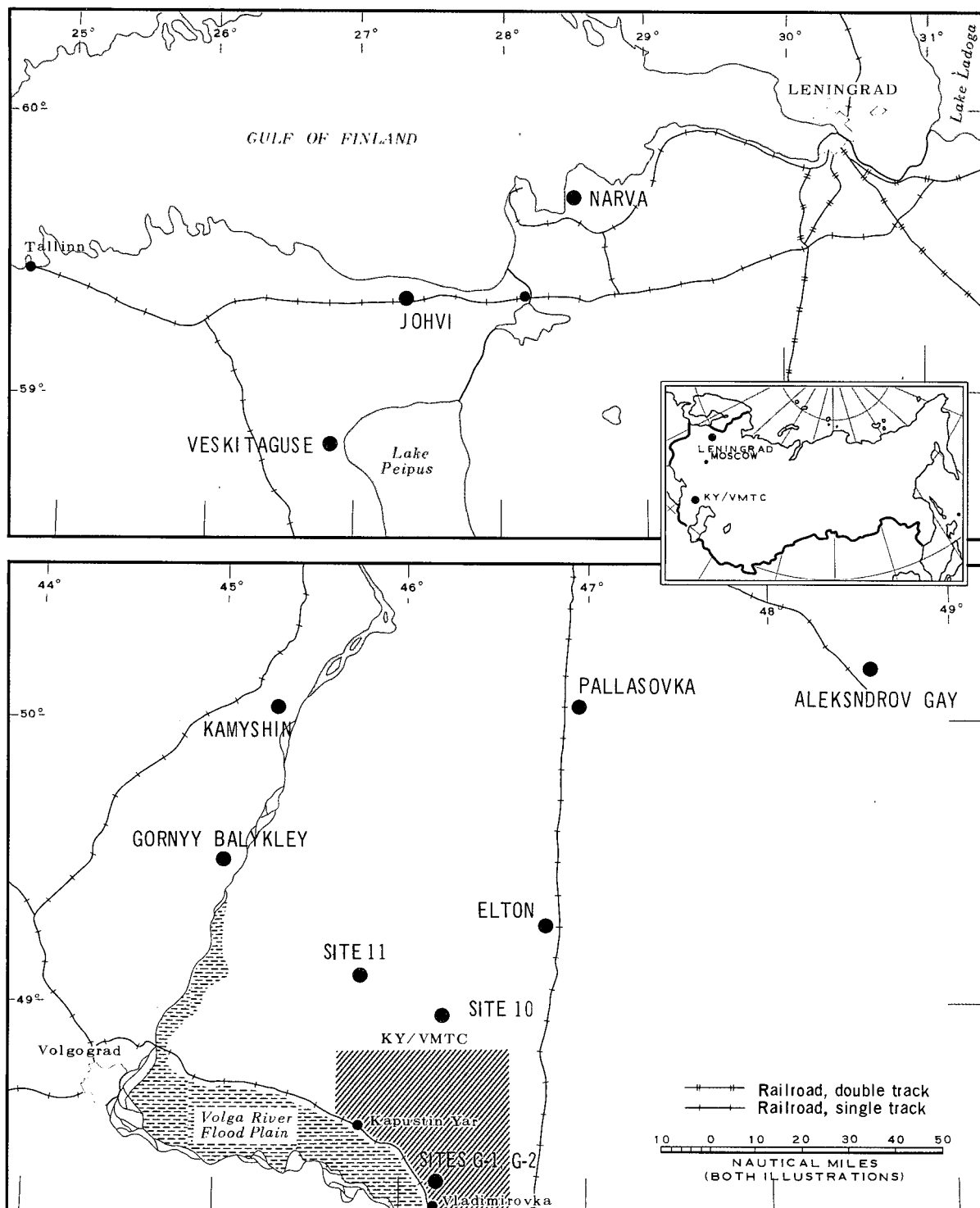


FIGURE 1. LOCATION MAP.

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INTRODUCTION

Twelve radar tracking facilities, all previously referred to as H-shaped facilities,* have been noted on [] photography of the USSR (Figure 1).** Nine of these facilities apparently serve as extended-range tracking for the Kapustin Yar/Vladimirovka Missile Test Center (KY/VMTC), as suggested by their location and equipment, while the other 3, in the Gulf of Finland area, are possibly a deployed version of these facilities.

Photographic analysis has failed to reveal any evidence associating these facilities with a specific missile system. The types of radar present, where identifiable, indicate an acquisition and tracking capability only against targets within the earth's atmosphere.

The present study consists primarily of a detailed photographic analysis of each of these 12 facilities. However, it also attempts to compare the facilities in 3 significant categories: location, configuration, and relative age. In addition, although the available photographic coverage is limited, an attempt has been made to describe and correlate the antennas and other equipment present at the various facilities.

COMPARISON OF FACILITIES

By Location

Generally, the facilities are located in 2 areas of the USSR. Nine of them are in the KY/VMTC area (Figure 1, bottom) and vary in distance from approximately 20 to 135 nautical miles (nm) from the surface-to-air missile (SAM) launch areas of the rangehead, and their overall siting provides good radar coverage of the area generally north and northeast of the rangehead. The remaining 3 facil-

*In NPIC/R-322/64, May 64, 1/ and various cables and immediate reports.

**See Addendum.

ities (Figure 1, top) are situated generally west of Leningrad and south of the Gulf of Finland, their individual locations forming a flat-triangle configuration with the apex of the triangle oriented generally northwest.

By Relative Age

Another way in which a facility comparison can be made is by the method of age relationship, although available photographic coverage offers some limitations.

For example, neither Site 10 nor Site 11 can be definitely negated on [] photography. However, Site 11 is present and apparently being expanded on photography of [] while Site 10 appears to be complete as of the same mission. Photography from an earlier mission [] is of such poor quality that it cannot be definitely determined whether there is activity at the locations of these facilities or not.

The G-2 facility, a conventional H type, can be negated in [] and was first seen--in an advanced stage of construction--in []

The Kamyshin facility can be negated in [] and appears to be under very early construction in [] Its counterpart, Aleksandrov Gay, cannot be negated on [] photography, but this may be misleading since the earliest coverage was in [] when the facility was seen in a very early stage of construction.

The 4 remaining facilities in the KY/VMTC area can be negated on photography of [] Three of these, Elton, Gornyy Balykley, and Pallasovka, are of the conventional H configuration, while the fourth is the G-1 facility of a somewhat different configuration. The first indication of construc-

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tion activity at all these facilities was noted in

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The 3 radar facilities in the Gulf of Finland area are all of more recent age than the KY/VMTC-area facilities. The Veskitaguse facility can be negated on photography of

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the Narva facility (operations area) in and the Johvi facility (operations area) in

By Configuration

A detailed comparison of the specific configurations of the facilities suggests 3 distinct groupings that have been designated 1) conventional H, 2) Kamyshin type, and 3) Site 11 type. The general characteristics of these 3 configurations are shown graphically in Figure 2, and can be summarized as follows.

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1. Conventional H Configuration. The conventional H configuration is the signature of 7 of the 12 facilities, the H reflecting the arrangement of the radar positions and the road pattern in the operations area of a typical facility. Although it is not known what exact operational significance it may have, this configuration does appear to have a preferred orientation,

The facilities having the typical H configuration are Instrumentation Site G-2, Elton, Gornyy Balykley, and Pallasovka in the KY/VMTC area, and the 3 facilities in the Gulf of Finland area, Narva, Johvi, and Veskitaguse.

2. Kamyshin-type Configuration. A second configuration is noted clearly at 2 KY/VMTC-area facilities, Kamyshin and Aleksandrov Gay, and also partially at Instrumentation Site G-1. This configuration is more elaborate in layout than is the conventional H, and includes a correspondingly greater number of radar and

equipment positions. The orientation of this type facility is not as obvious as that of the conventional H since the radar positions are of a more nearly similar height and, therefore, the orientation given in the individual description is arbitrary, as indicated in Figure 2.

By virtue of its greater number of radar positions, this type of facility would have a greater tracking capability than the conventional H type, and this appears to be the essential operational difference between the 2 types. In addition, the Kamyshin type has a larger support area than does the conventional H type, another factor indicating a greater functional capability.

3. Site 11-type Configuration. Two additional instrumentation facilities are included in this report primarily because they have previously been carried as H-shaped facilities; however, detailed photographic analysis indicates that they are older and of a substantially different configuration and therefore should not be considered H-shaped facilities. These 2 facilities, KY/VMTC SAM Instrumentation Sites 10 and 11, are also the only facilities of the 12 in this report that have been proved beyond doubt to be a part of the SAM range instrumentation, as indicated by their cable tie-in to the SAM rangehead. This fact also tends to separate them from the remaining facilities which cannot be definitely so associated. The Site 11-type configuration is not as well defined as either of the 2 previous types, and differences occur between Sites 10 and 11 themselves. In addition, these sites are the only ones having their operations and support areas combined.

ANTENNAS NOTED AT FACILITIES

The great majority of the 12 facilities have been observed only on small-scale photography, which restricts detailed interpretation.

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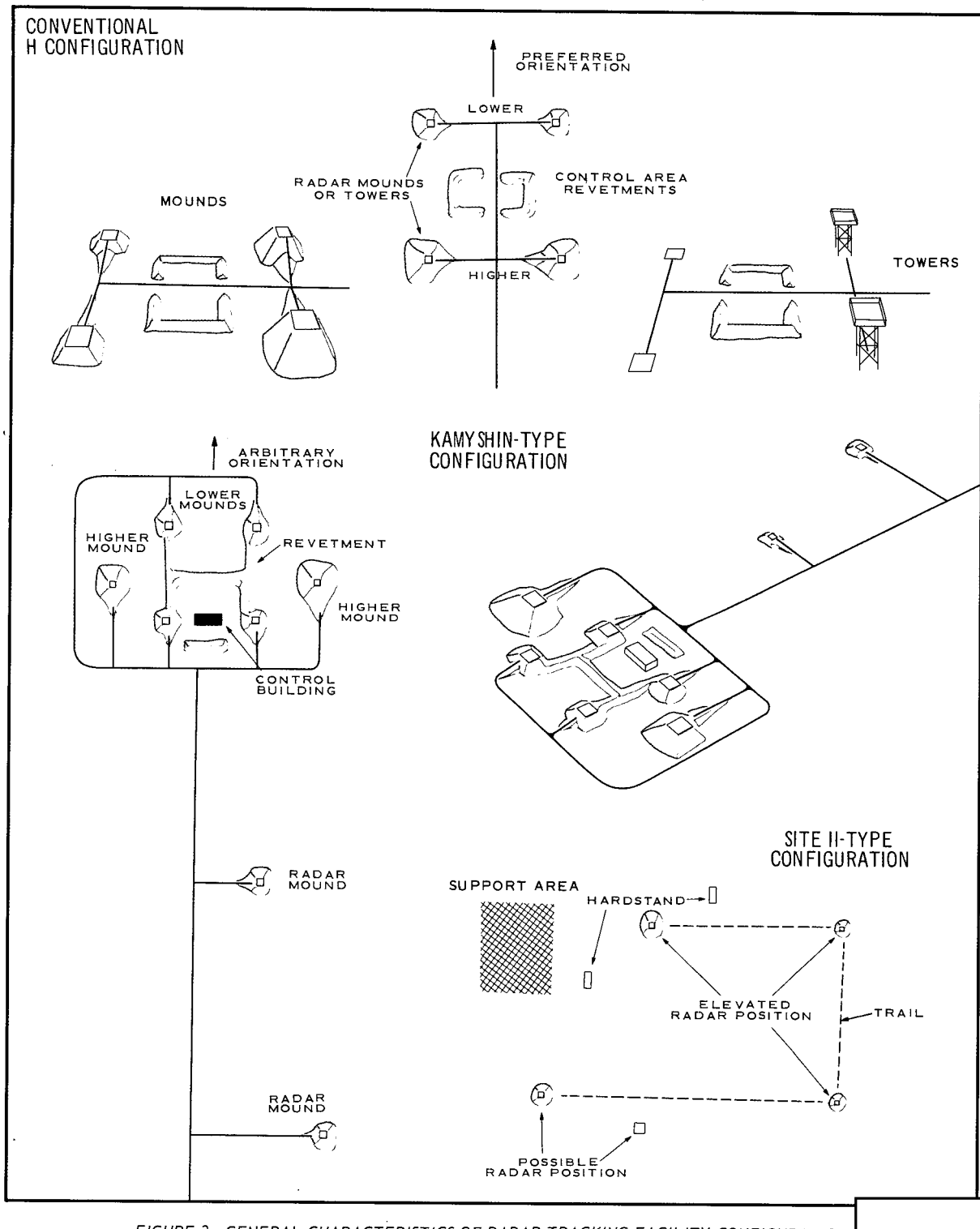


FIGURE 2. GENERAL CHARACTERISTICS OF RADAR TRACKING FACILITY CONFIGURATIONS.

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As a result, at many of the facilities it cannot be determined whether radar positions are occupied or not, much less the actual type of equipment present. A few sites, however, notably Kamyshin and G-1, have been covered [redacted] and a correspondingly more detailed analysis is possible for these. By correlation, it seems likely that similar types of antennas would be used at sites of similar configuration, although this assumption cannot be confirmed by available photography.

The radar antennas at Kamyshin, which was covered by [redacted] were determined to be probable BACK NET range-and-azimuth radars and possible SIDE NET height-finder radars. These determinations were made on the basis of size measurement, shadow analysis, nonstereo image

analysis, and comparison with other radars noted at Sary-Shagan and KY/VMTC [redacted]

At Site G-1, the only other facility at which radar antennas could be identified by type, the radars identified on [redacted] were a probable BAR LOCK and a height finder (probably STONE CAKE), together with an additional radar of unidentified type. These radars are older types than those noted at Kamyshin, and are typical of the equipment found at most air-warning radar facilities.

No other antennas, either radar or communications, could be identified by type at any of the facilities although additional antennas are present. All antennas, probable or possible, are mentioned in the detailed descriptions of each facility, which follow.

TYPE: Conventional H
LOCATION: KY/VMTC

INSTRUMENTATION SITE G-2

(See Figure 3)

Coordinates: 48-24-15N 46-14-10E

Orientation: 335°

Mounds/Radars: 4 mounds (items 1-4) appear unoccupied, and no radars are visible within the site

Instrumentation/Communications Positions: 2 unoccupied hardstands (items 5 and 6) in western end of site, with probable control position between them

Control Buildings/Revetments: No revetments, but 1 large and 1 small bunkered control building are situated between the mounds;

there is also an additional control/support building at the center of the facility

Support Area: Undetermined

Map: DIA. USATC, Series 200, Sheet 0235-22HL, 4th ed, May 63 (S)

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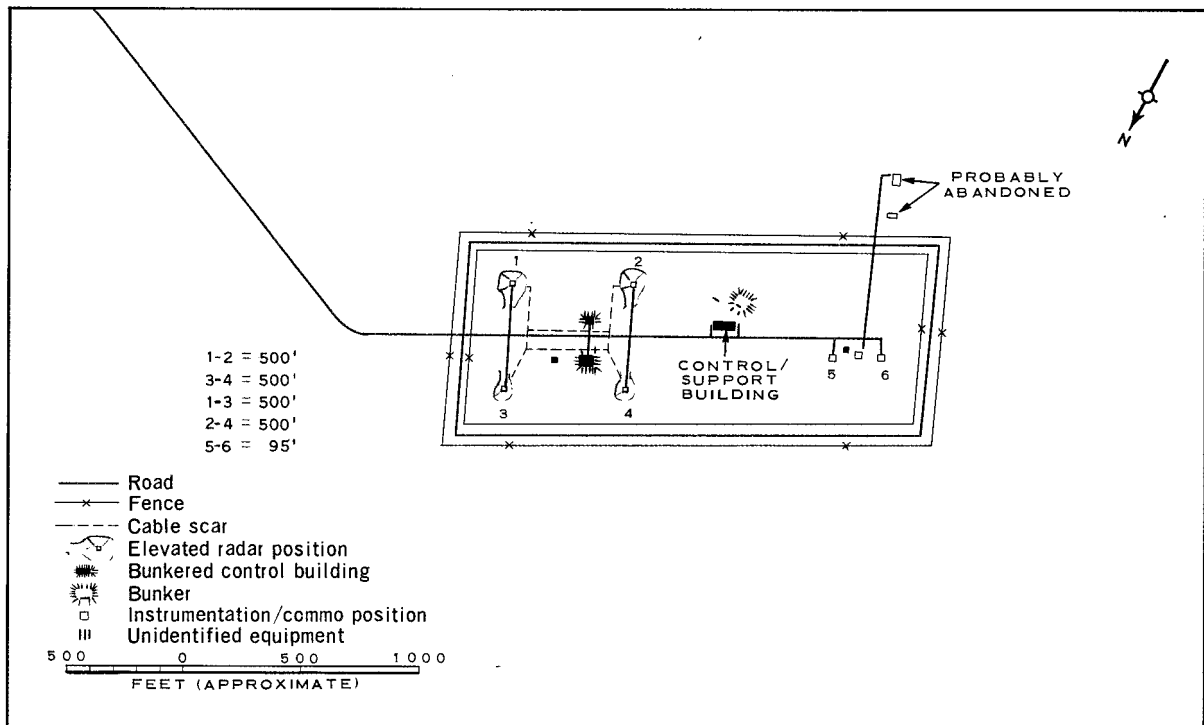
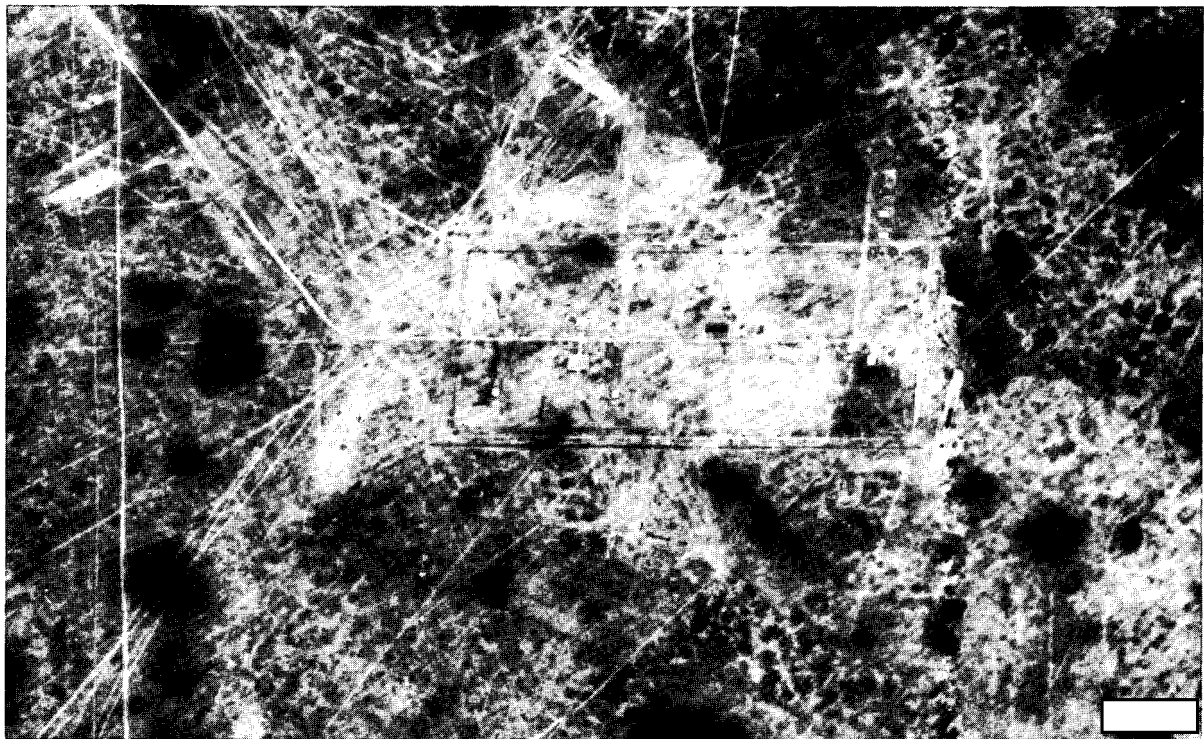


FIGURE 3. INSTRUMENTATION SITE G-2.


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TYPE: Conventional H
LOCATION: KY/VMTC Area

ELTON RADAR TRACKING FACILITY

(See Figure 4)

Coordinates: 49-15-40N 46-48-20E

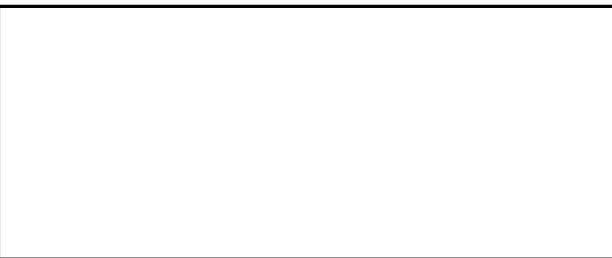
Orientation: 

Mounds/Radars: 4 mounds (items 1-4) appear unoccupied, and no radars are visible within the facility

Instrumentation/Communications Positions: 2 unoccupied hardstands (items 5 and 6) with a small probable control building between them

Control Buildings/Revetments: No revetments, but 1 large and 1 small bunkered control building are situated between the mounds

Support Area: Secured area with 12 buildings situated 4,000 feet east.



Map: DIA. USATC, Series 200, Sheet 0235-18HL, 2d ed, Jan 63 (S)

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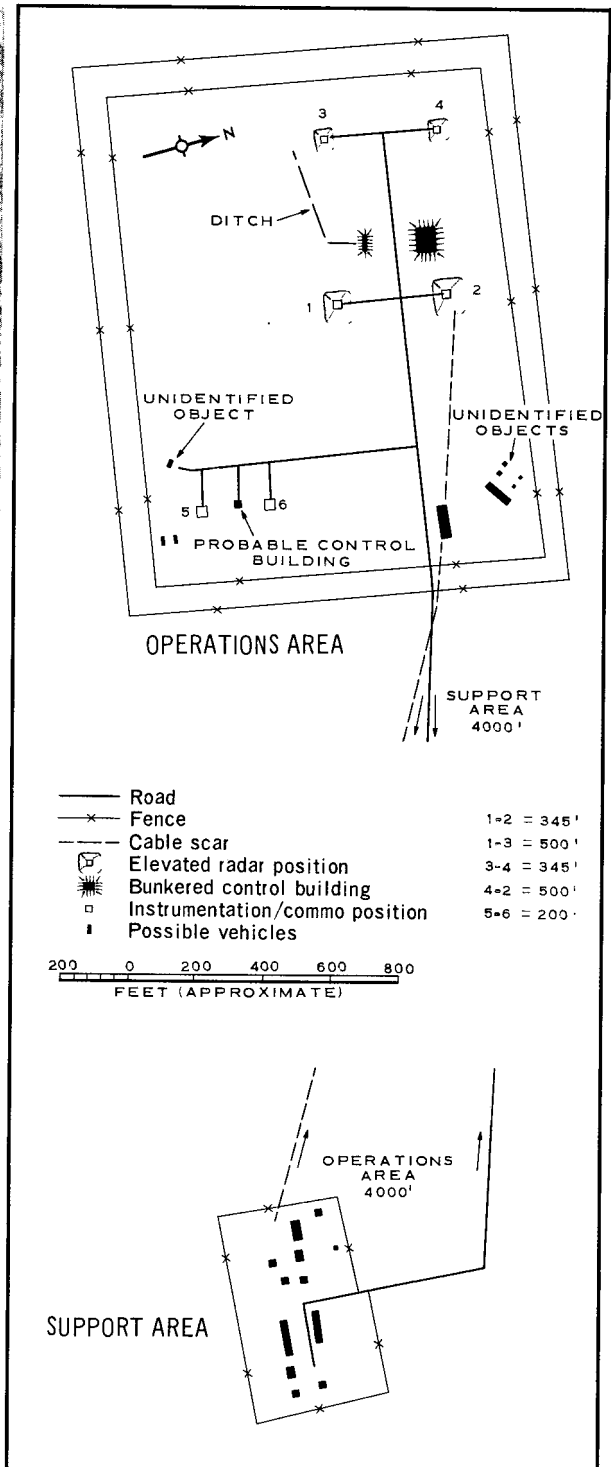
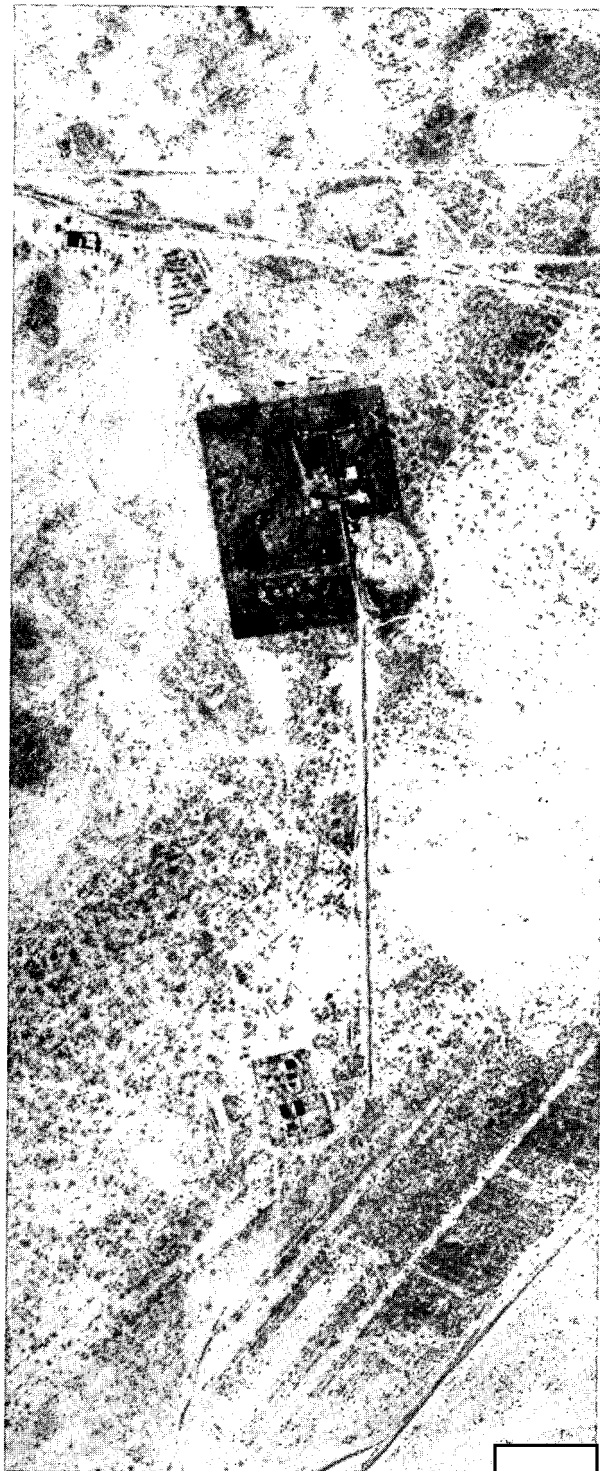


FIGURE 4. ELTON RADAR TRACKING FACILITY.

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
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TYPE: Conventional H
LOCATION: KY/VMTC Area

GORNYY BALKLEY RADAR TRACKING FACILITY

(See Figure 5)

Coordinates: 49-33-30N 45-02-00E

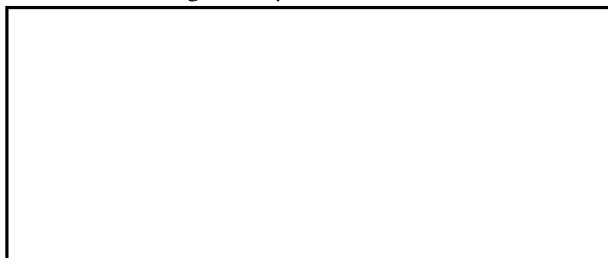
Orientation: 

Mounds/Radars: 4 mounds (items 1-4), the first 3 of which are occupied by radars of unidentified type

Instrumentation/Communications Positions: 2 of 3 positions (items 5 and 6) appear occupied

Control Buildings/Revetments: 2 C-shaped revetments between mounds 1 and 2 appear occupied by probable vehicles/vans; no control buildings could be identified

Support Area: An unsecured area of at least 13 buildings is 2,000 feet to the northeast



Map: DIA. USATC, Series 200, Sheet 0235-17HL, 3d ed, Apr 64 (S)

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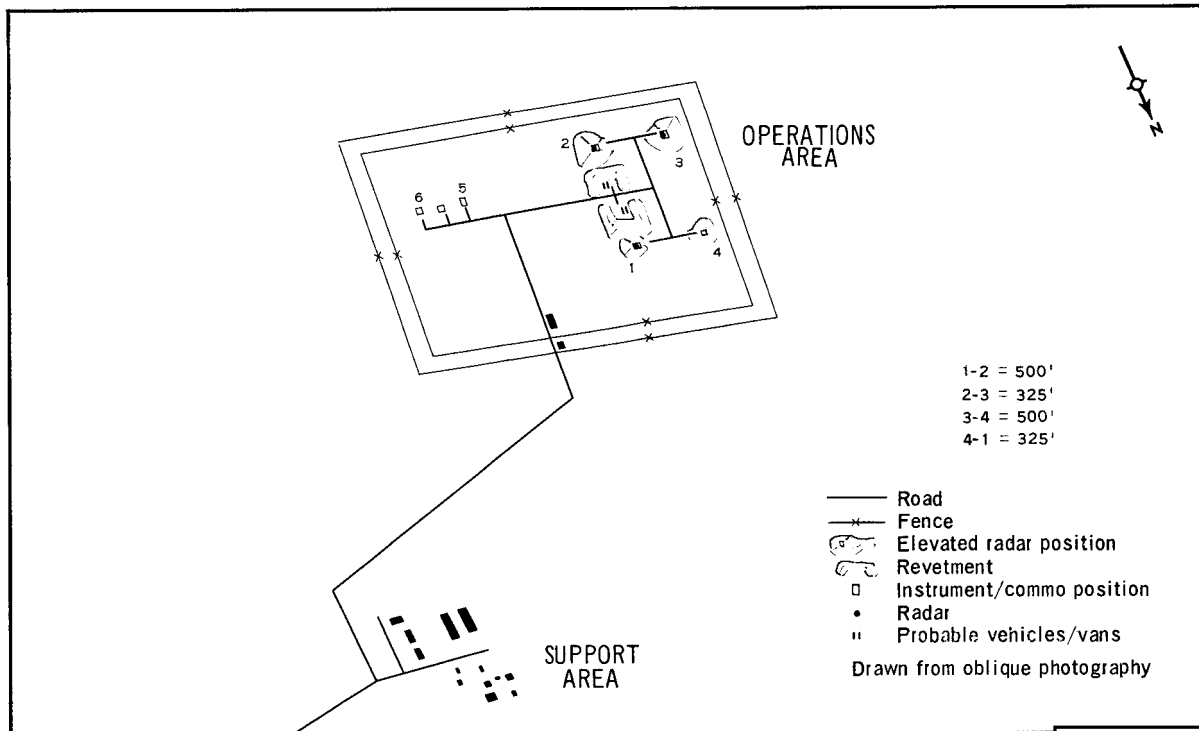


FIGURE 5. GORNYY BALYKLEY RADAR TRACKING FACILITY.

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TYPE: Conventional H
LOCATION: KY/VMTC Area

PALLASOVKA RADAR TRACKING FACILITY

(See Figure 6)

Coordinates: 50-04-00N 46-54-00E

Orientation: 360°

Mounds/Radars: 4 mounds (items 1-4) appear
unoccupied, and no radars are visible within
the facility

Instrumentation/Communications Positions:

None identified

Control Buildings/Revetments: 2 C-shaped
revetments contain 4 rows of vehicles/vans;
no control buildings could be identified

Support Area: A possible cable scar leads
5,000 feet southwest to an unsecured area
containing at least 13 buildings

Map: USAF. USATC, Series 200, Sheet 0235-
13AL, 1st ed, Jul 60 (S)

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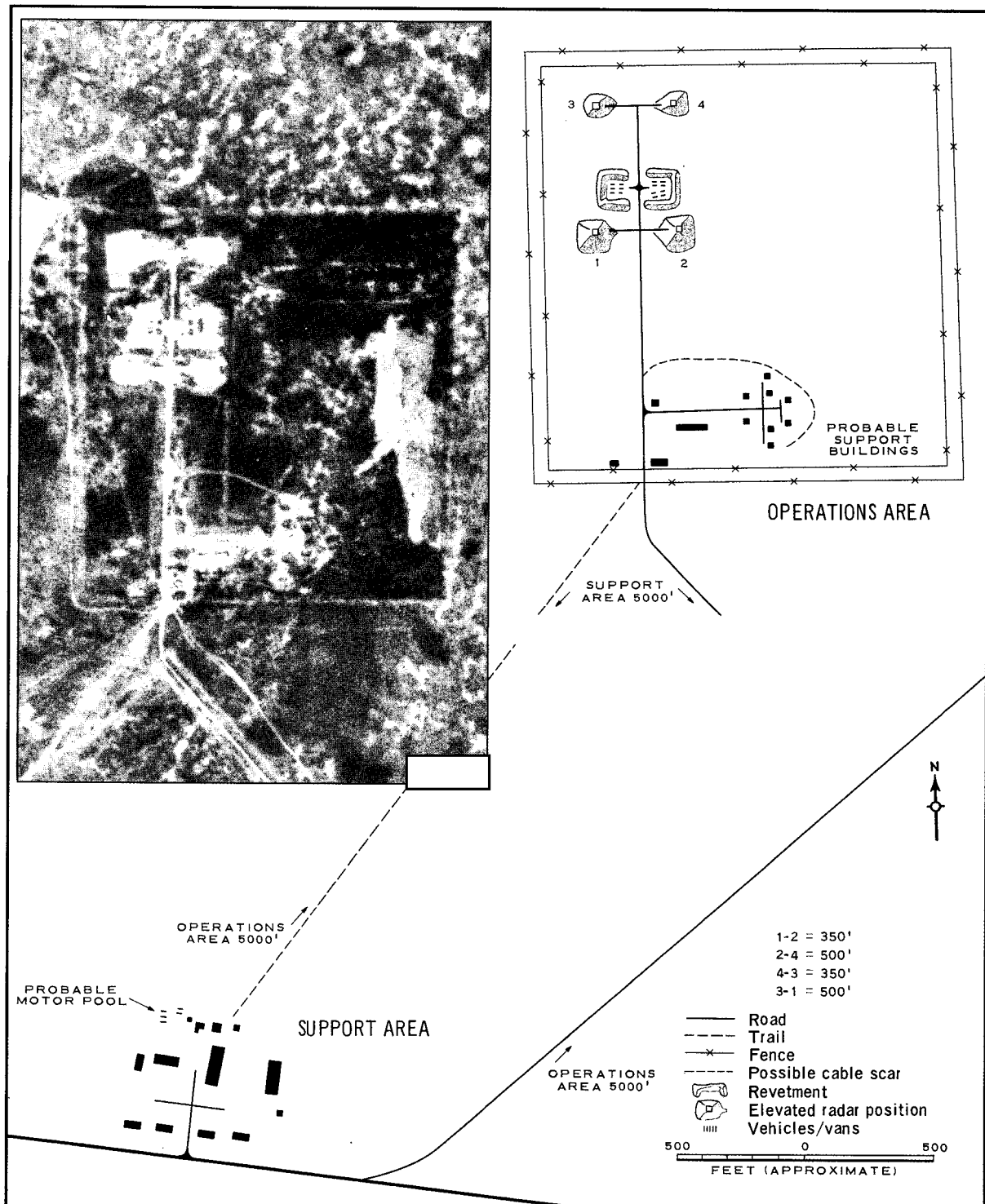


FIGURE 6. PALLASOVKA RADAR TRACKING FACILITY.

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TYPE: Conventional H (partial; towers)
LOCATION: Gulf of Finland Area

NARVA RADAR TRACKING FACILITY

(See Figure 7)

Coordinates: 59-43-30N 28-29-00E

Orientation: 125/315°

Towers/Radars: 2 towers (items 1 and 2)
are apparently occupied but radar type
remains undetermined because of small-
scale photography

Instrumentation/Communications Positions:

None identified

Control Buildings/Revetments: 2 C-shaped
revetments contain probable vehicles/vans;
no control buildings could be identified

Support Area: A small unsecured area 2,000
feet west-northwest contains at least 3
buildings, 3 unidentified objects, and sev-
eral probable vehicles/vans

Map: DIA. USATC, Series 200, Sheet 0153-
4HL, 2d ed, May 63 (S)

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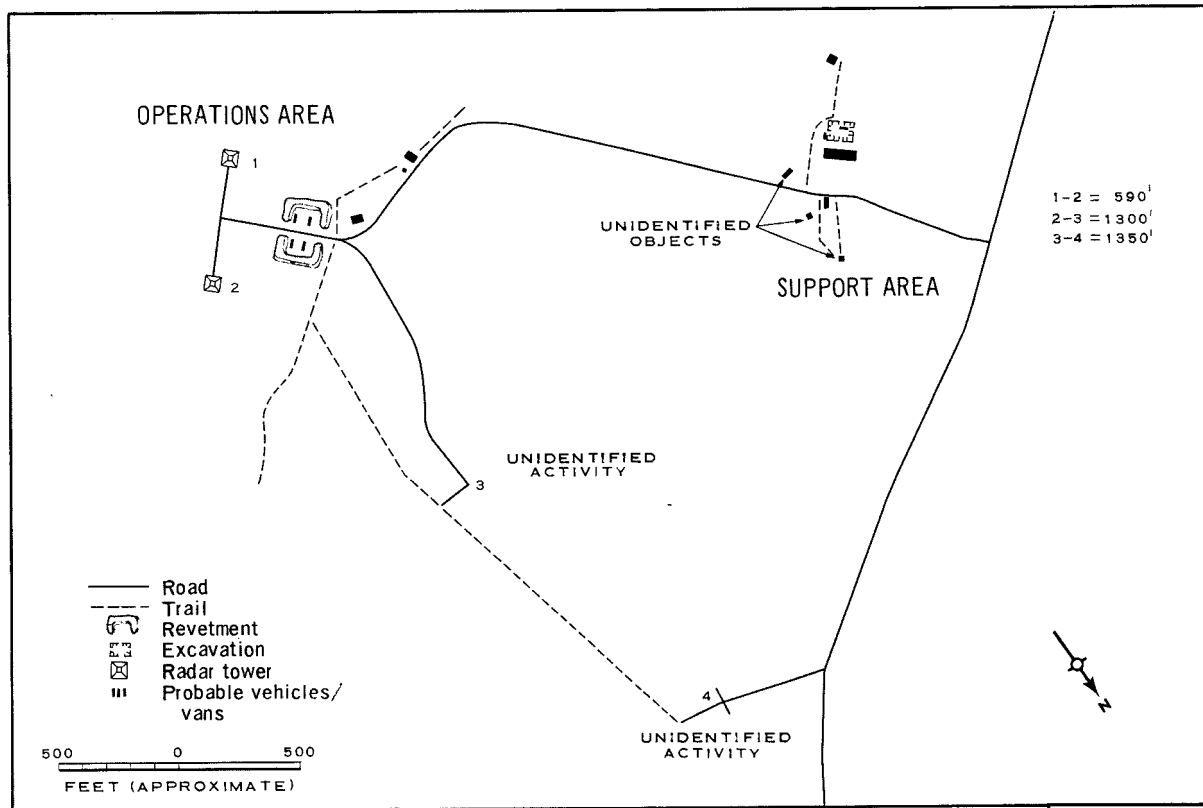
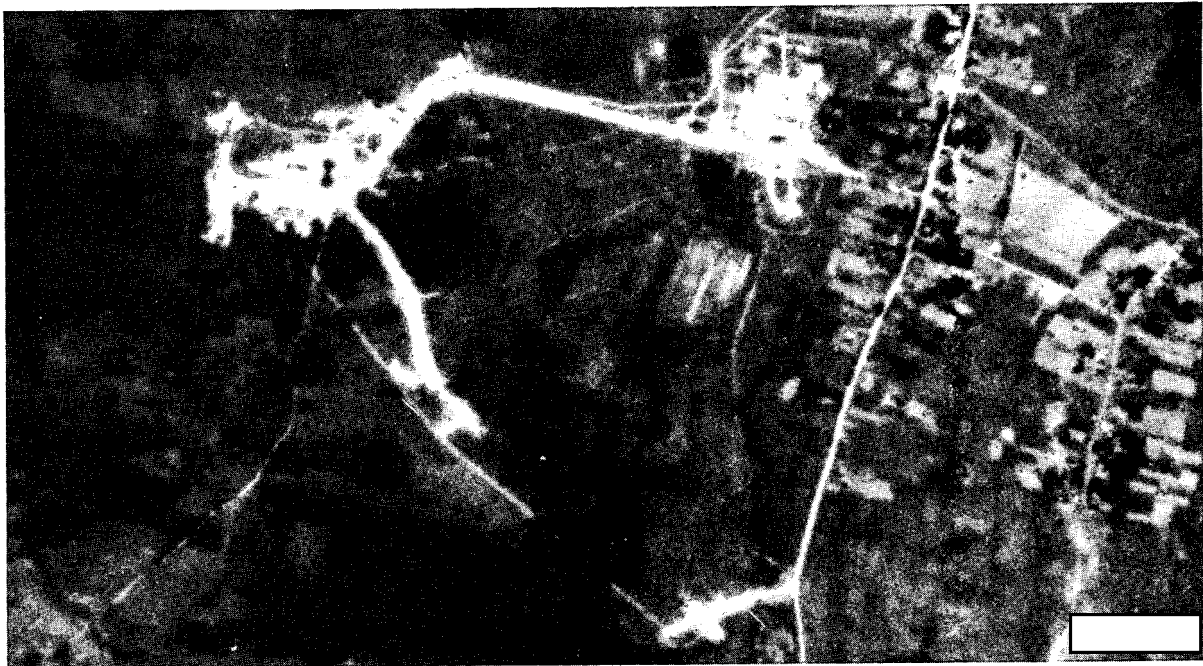


FIGURE 7. NARVA RADAR TRACKING FACILITY.


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TYPE: Conventional H (towers)
LOCATION: Gulf of Finland Area

JOHVI RADAR TRACKING FACILITY

(See Figure 8)

Coordinates: 59-22-00N 27-21-00E

Orientation: 

Towers/Radars: 2 radar towers (items 1 and 2)
and 2 probable radar positions (items 3 and
4) are visible, but it cannot be determined
what radars, if any, are present

Instrumentation/Communications Positions:

None identified

Control Buildings/Revetments: 2 C-shaped
revetments contain vehicles, but no con-
trol buildings are present

Support Area: A partially secured area 1,700
feet southwest contains approximately 5
buildings

Map: DIA. USATC, Series 200, Sheet 0153-
4HL, 2d ed, May 63 (S)

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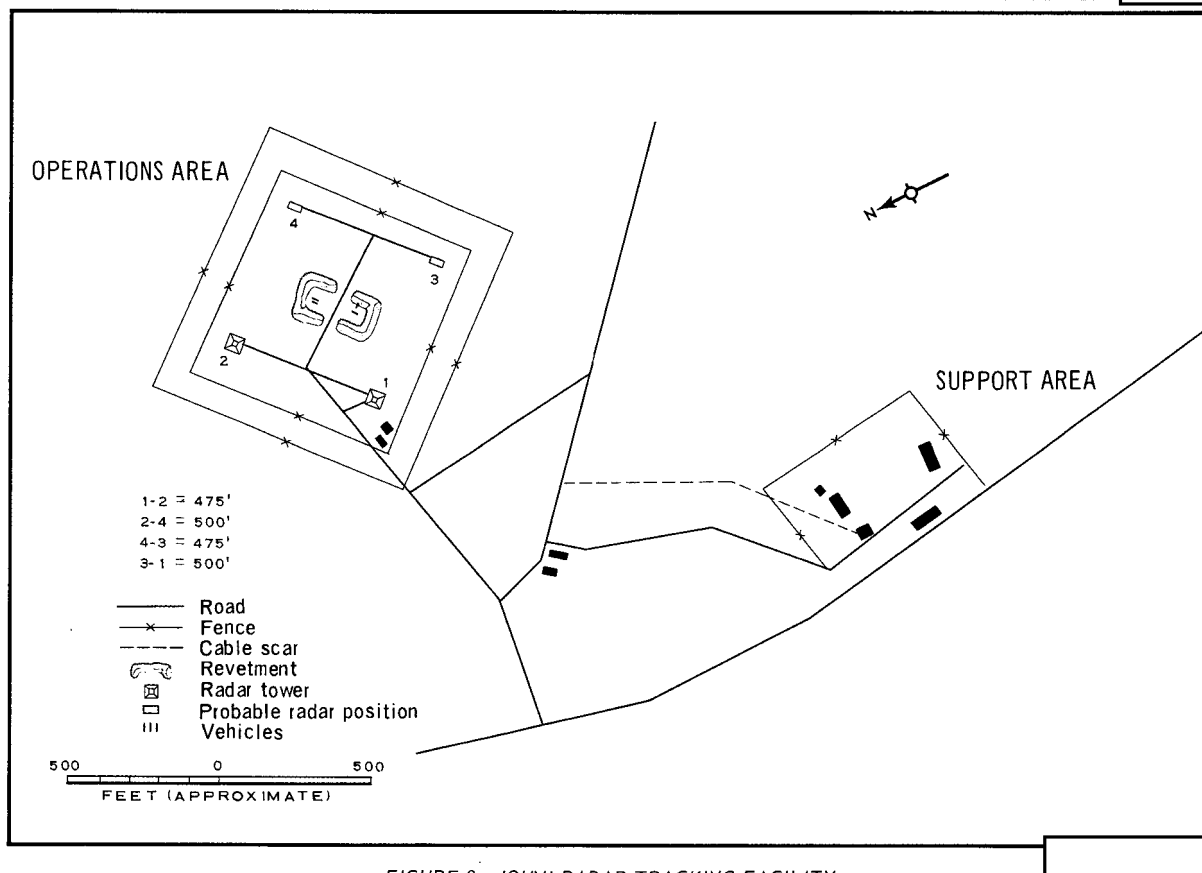


FIGURE 8. JOHVI RADAR TRACKING FACILITY.

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TYPE: Conventional H (towers)
LOCATION: Gulf of Finland Area

VESKITAGUSE RADAR TRACKING FACILITY

(See Figure 9)

Coordinates: 58-50-00N 26-47-30E

Orientation: 220°

Towers/Radars: 2 radar towers (items 1 and 2)
and 2 probable radar positions (items 3 and
4) are visible, but it cannot be determined
what radars, if any, are present

Instrumentation/Communications Positions:
None identified

Control Buildings/Revetments: 2 C-shaped
revetments contain vehicles, but no con-
trol buildings are present

Support Area: Unsecured area about 1,100
feet northeast contains approximately 8
buildings

Map: DIA. USATC, Series 200, Sheet 0153-
8HL, 4th ed, Dec 62 (S)

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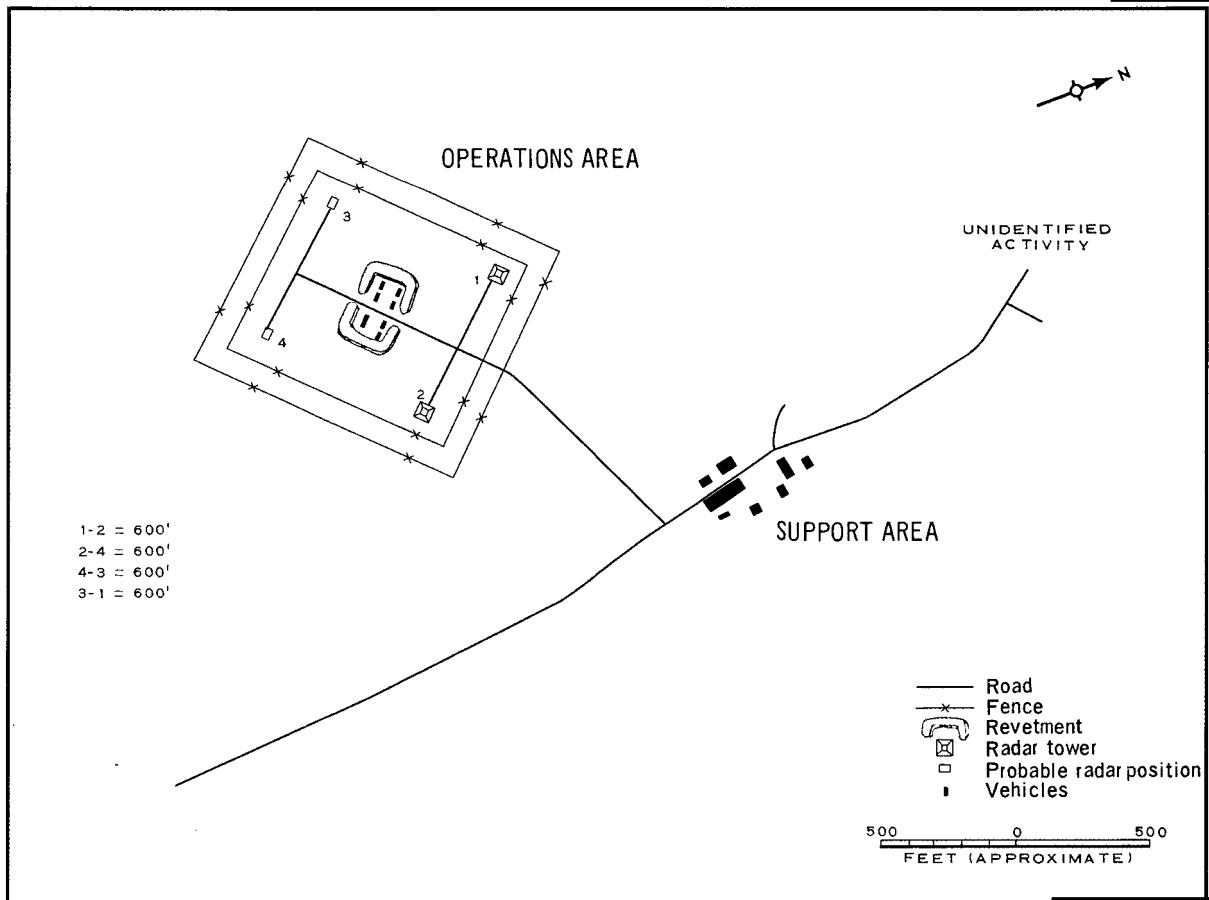
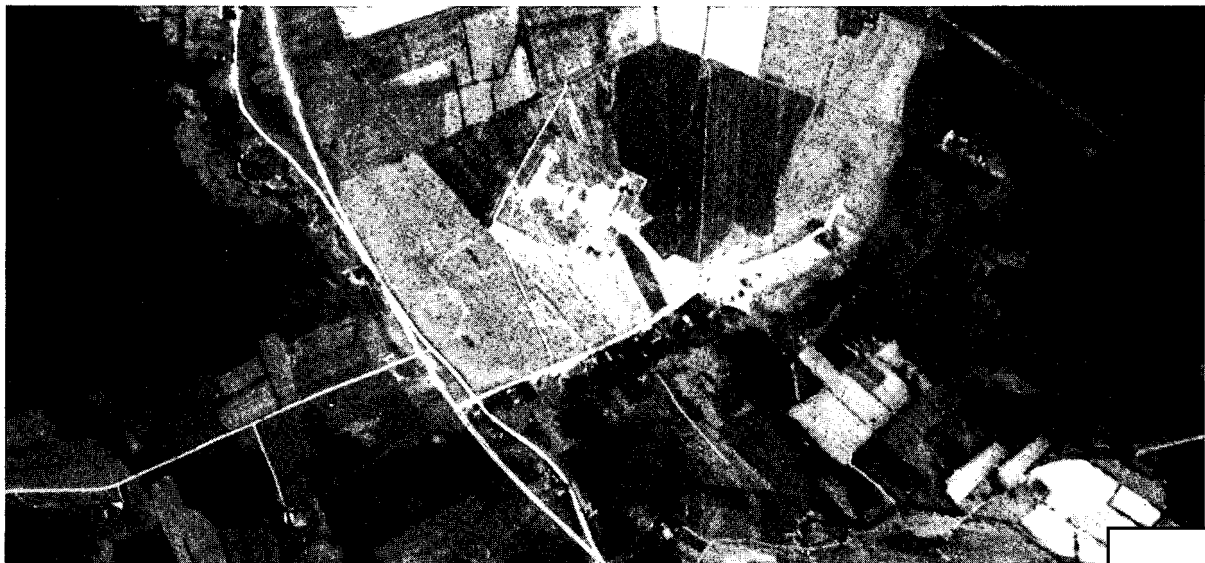


FIGURE 9. VESKITAGUSE RADAR TRACKING FACILITY.


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TYPE: *Kamyshin*
LOCATION: *KY/VMTC Area*

KAMYSHIN RADAR TRACKING FACILITY

(See Figure 10)

Coordinates: 50-03-00N 45-15-40E

Orientation: 


Mounds/Radars: Of 8 mounds, 7 are occupied as follows--mounds 1 and 2 by probable BACK NET range-and-azimuth radars; mounds 3-6 by possible SIDE NET height-finder radars; mound 7 by an unidentified type of radar

Instrumentation/Communications Positions:

Approximately 4-5 positions (items 9 and 10); there are 2 possible yagi-type antennas at item 9

Control Buildings/Revetments: Single control building situated between mounds 5 and 6; 8 revetments, 7 of which are occupied by vehicles/vans and unidentified objects

Support Area: Partially secured area to the southeast contains about 25 buildings including 9 barracks, several administration types, a heating plant, a generator building, and a small substation; this area is connected to the operations area by cable


Map: DIA. USATC, Series 200, Sheet 0235-12HL, 3d ed, Jul 64 (S)

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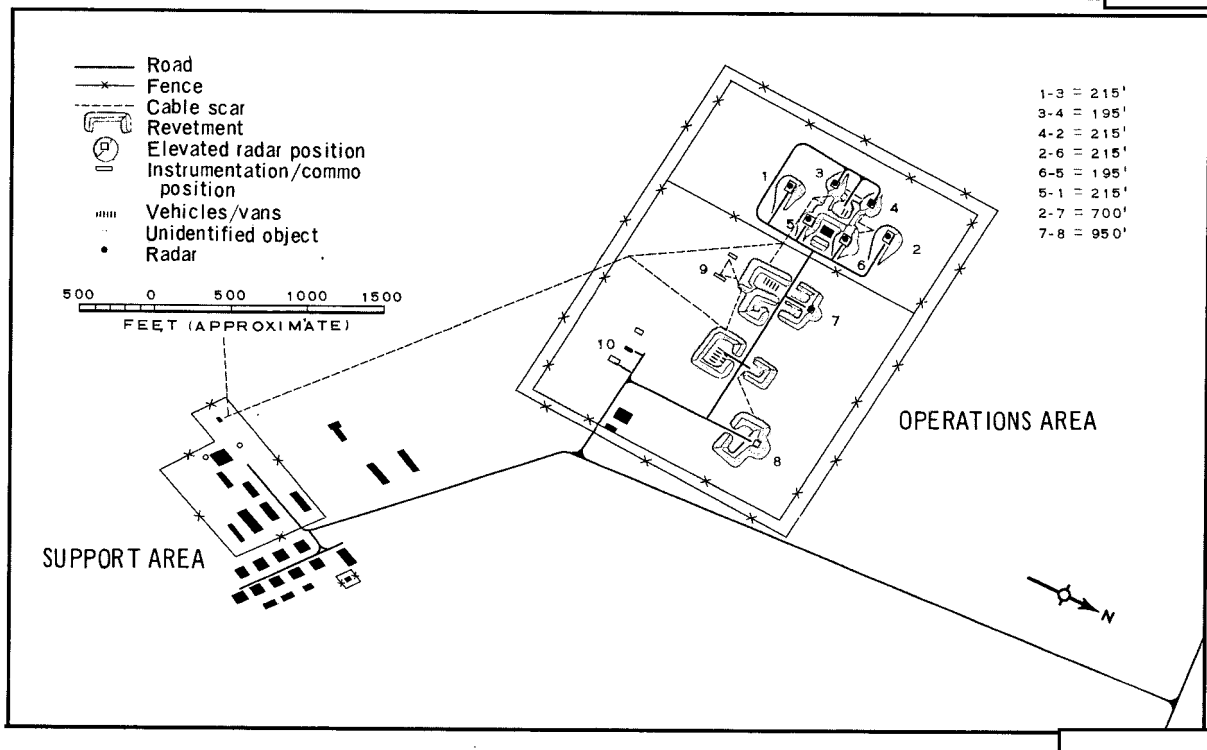
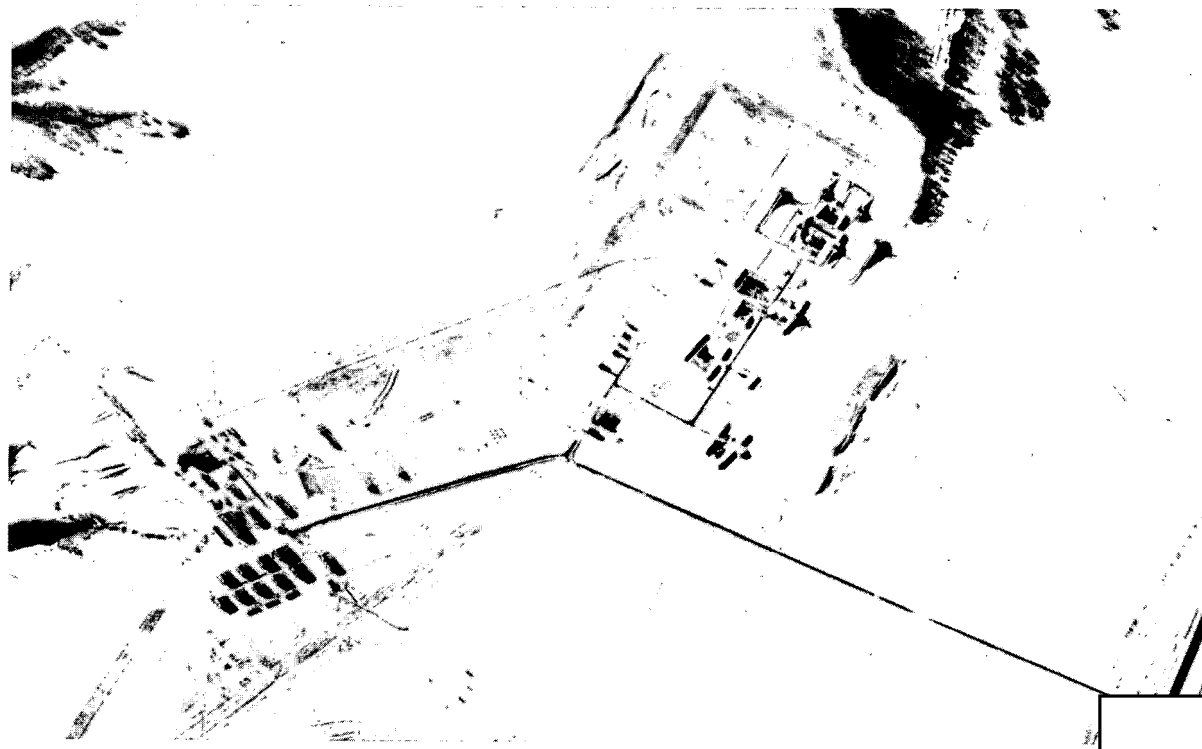


FIGURE 10. KAMYSHIN RADAR TRACKING FACILITY.

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TYPE: Kamyskin
LOCATION: KY/VMTC Area

ALEKSANDROV GAY RADAR TRACKING FACILITY

(See Figure 11)

Coordinates: 50-10-00N 48-33-30E

Orientation:

Mounds/Radars: Of 8 mounds (items 1-8), at least mound 1 is occupied by a probable radar

Instrumentation/Communications Positions:

Positions occur at items 9 and 10, but precise occupancy cannot be determined

Control Buildings/Revetments: Single control building situated between mounds 4 and 5; 5 revetments, at least 2 occupied by either vehicles/vans or unidentified objects

Support Area: Secured area about 4,700 feet south-southeast contains at least 16 buildings including 5 barracks, several administration types, and other maintenance/utility types; a cable leads to the operations area

Negation: Not able to be determined on photography

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Map: USAF. USATC, Series 200, Sheet 0235-14HL, 1st ed, Dec 61 (S)

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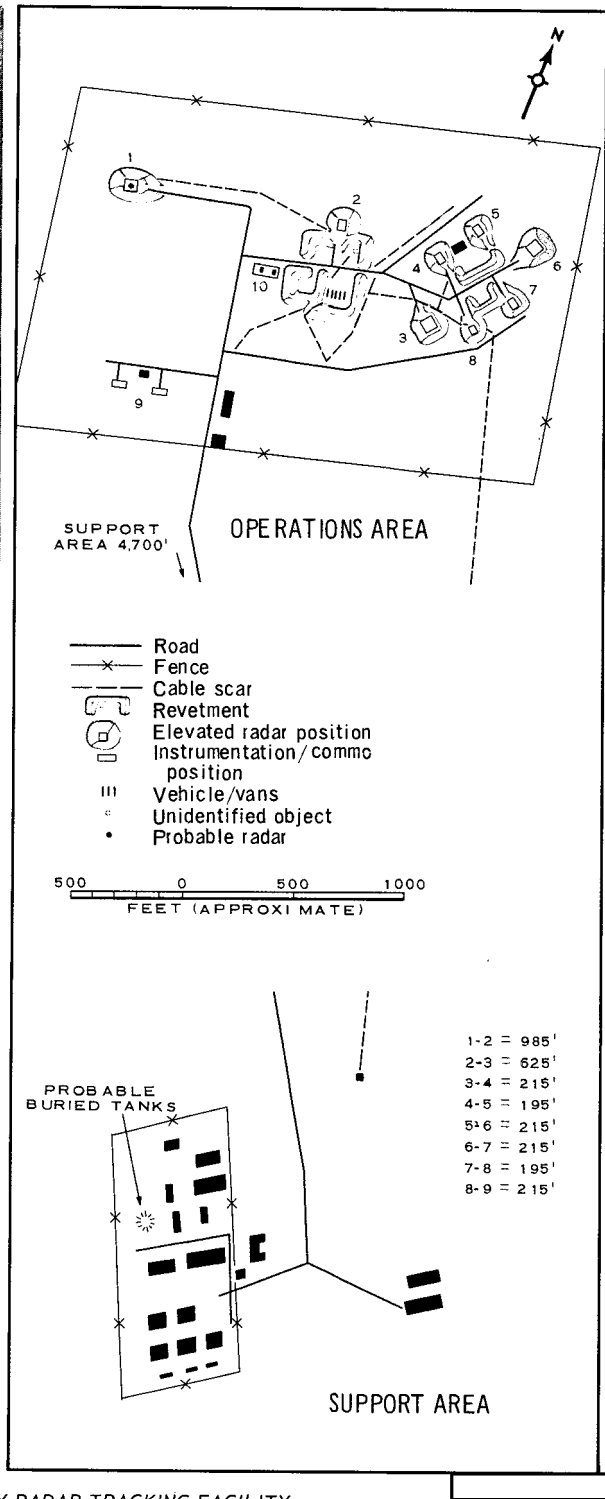
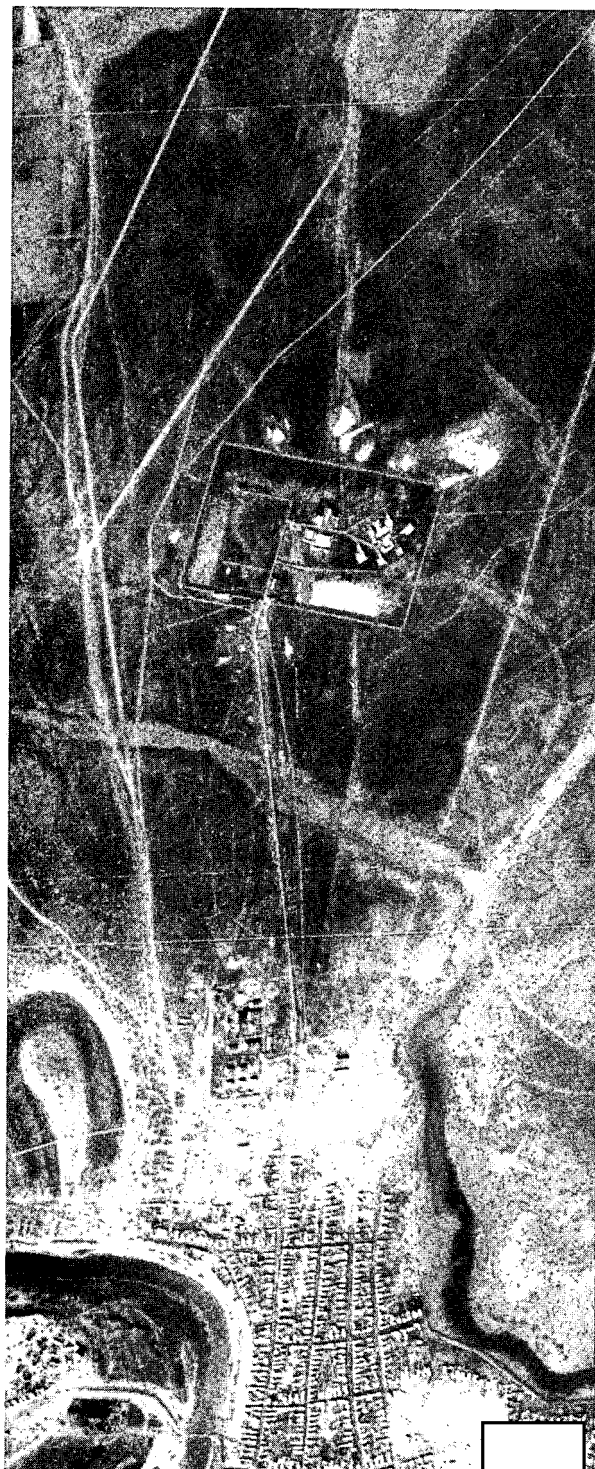


FIGURE 11. ALEKSANDROV GAY RADAR TRACKING FACILITY.

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TYPE: *Kamyshin (partial)*
LOCATION: KY/VMTC

INSTRUMENTATION SITE G-1

(See Figure 12)

Coordinates: 48-25-00N 46-14-40E

Orientation: 335°

Mounds/Radars: 3 mounds (items 1-3), with mound 1 occupied by a probable BAR LOCK and mound 2 by a probable STONE CAKE; in addition, there is a probable radar of unidentified type situated just off mound 3

Instrumentation/Communications Positions:

Of 3 probable positions at item 4, 2 appear occupied by unidentified equipment; there is also a large hardstand (item 5) occupied by a number of electronics vans

Control Buildings/Revetments: None observed

Support Area: Undetermined

Map: DIA. USATC, Series 200, Sheet 0235-22HL, 4th ed, May 63 (S)

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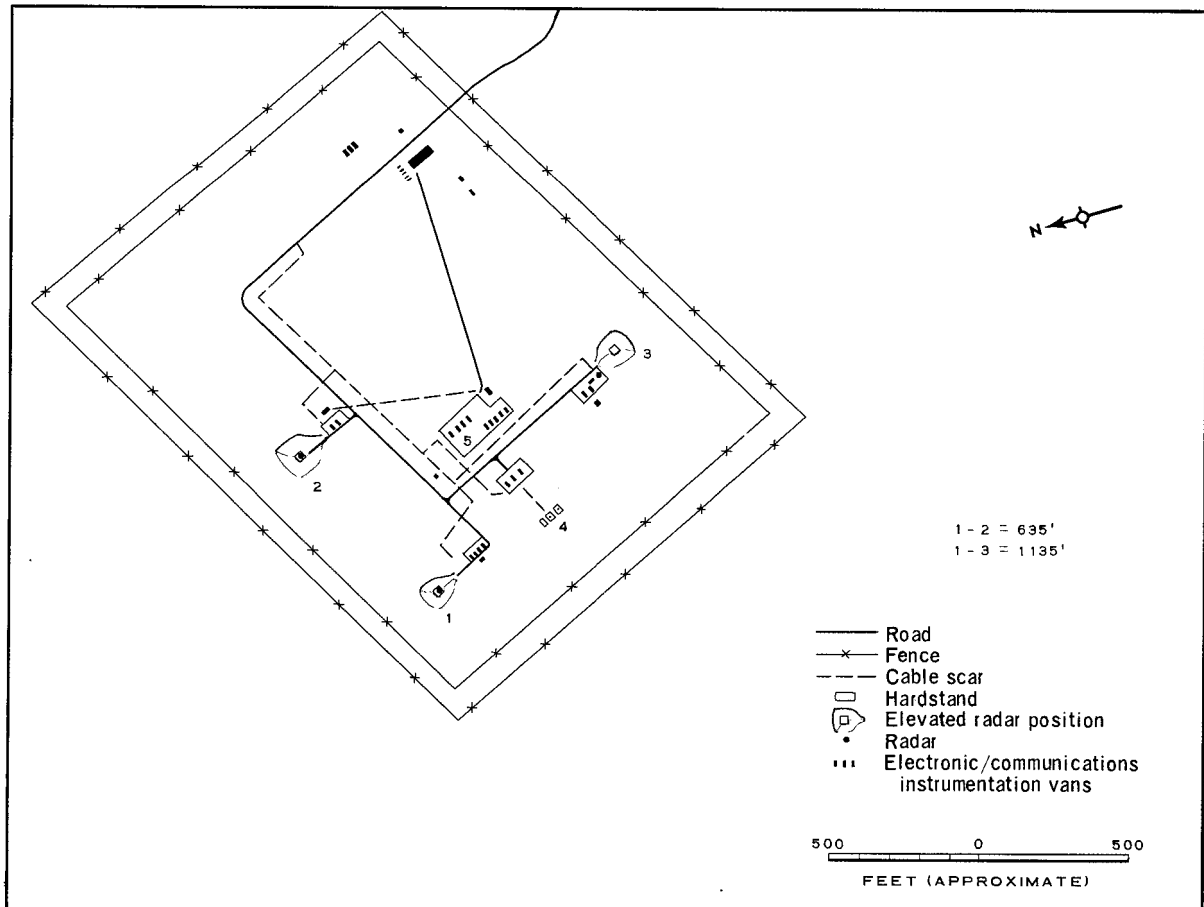
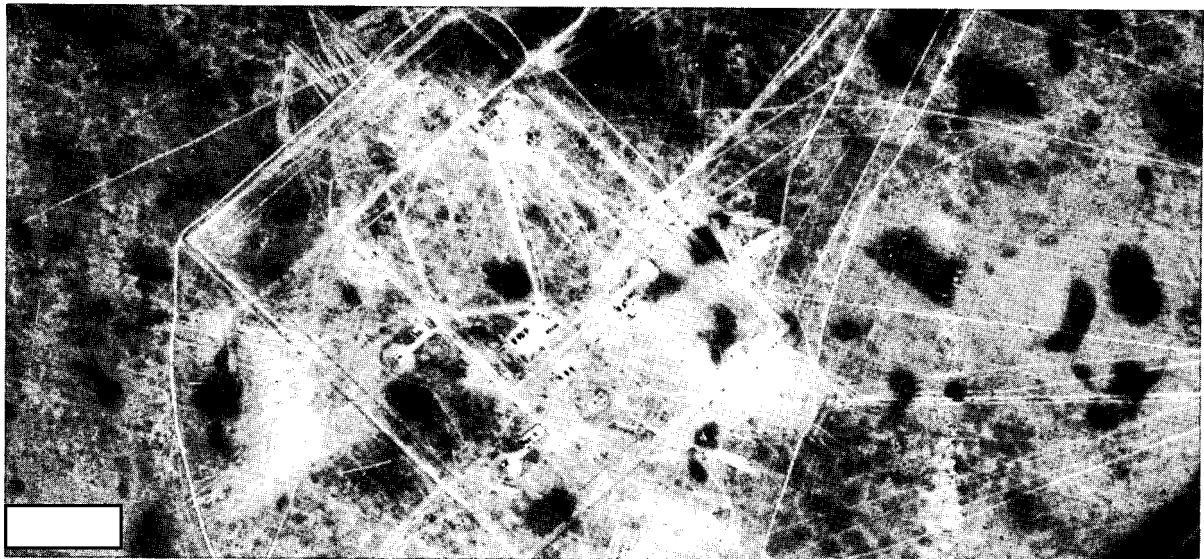


FIGURE 12. INSTRUMENTATION SITE G-1.

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TYPE: Site 11
LOCATION: KY/VMTC

KY/VMTC INSTRUMENTATION SITE 10

(See Figure 13)

The radar and instrumentation/communications positions at Site 10 (48-57-30N 46-16-00E) do not occur in any readily recognizable pattern. There are 4 slightly raised, unoccupied radar positions (items 1-4), an unoccupied probable radar position (item 5), and an unoccupied mounded position (item 6). There is a concentration of instrumentation/communications positions and equipment in the northeast corner of the site, including probable vans on hardstands (items 7 and 8), 2 positions with unidentified equipment (items 9 and 10), and a control building situated between items 7 and 8. Scattered about the site are other hardstands and possible instrumentation positions, at least 5 buildings, and various vehicles/vans and unidentified equipment/structures. The site has no apparent orientation. It cannot be negated on [redacted] photography and was first definitely observed in [redacted]

Map: DIA. USATC, Series 200, Sheet 0235-17HL, 3d ed, Apr 64 (S)

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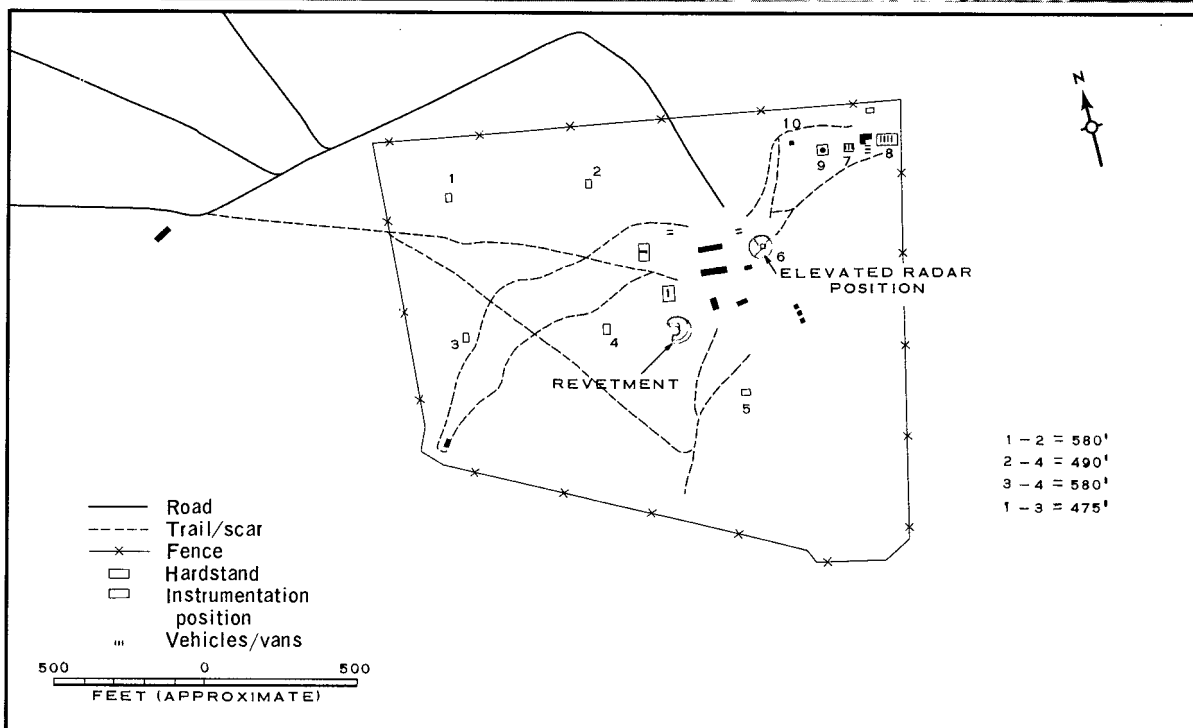
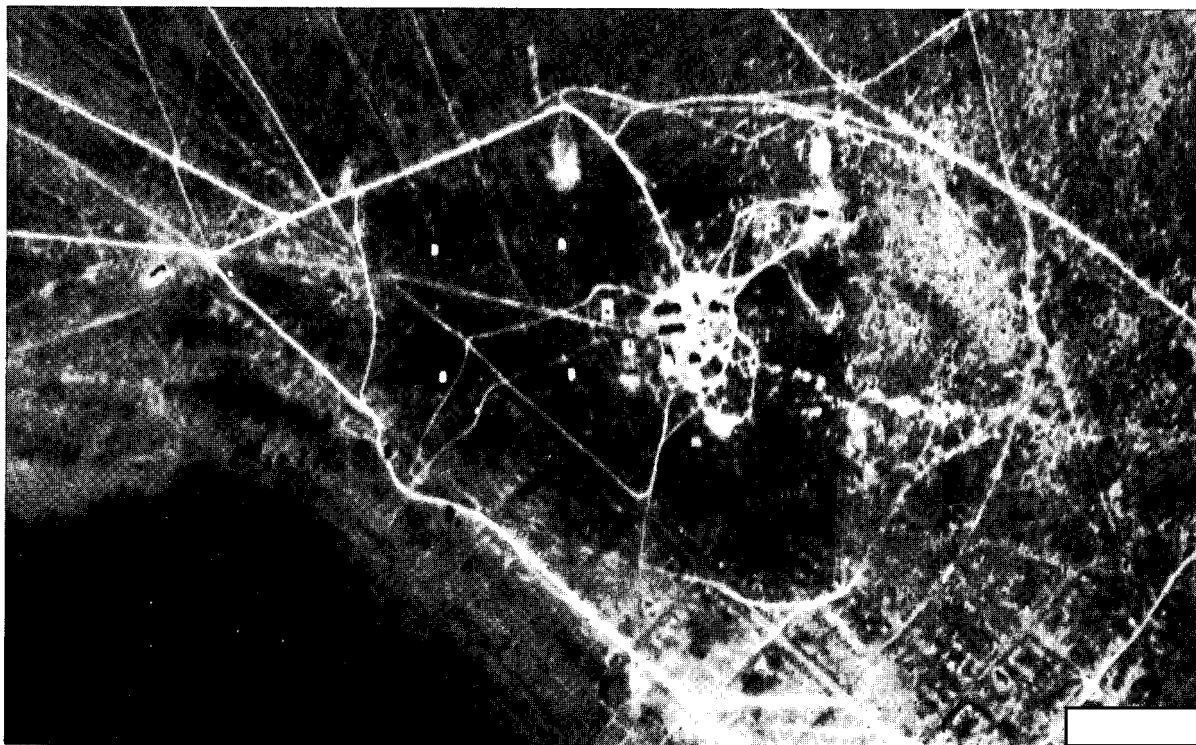


FIGURE 13. INSTRUMENTATION SITE 10.

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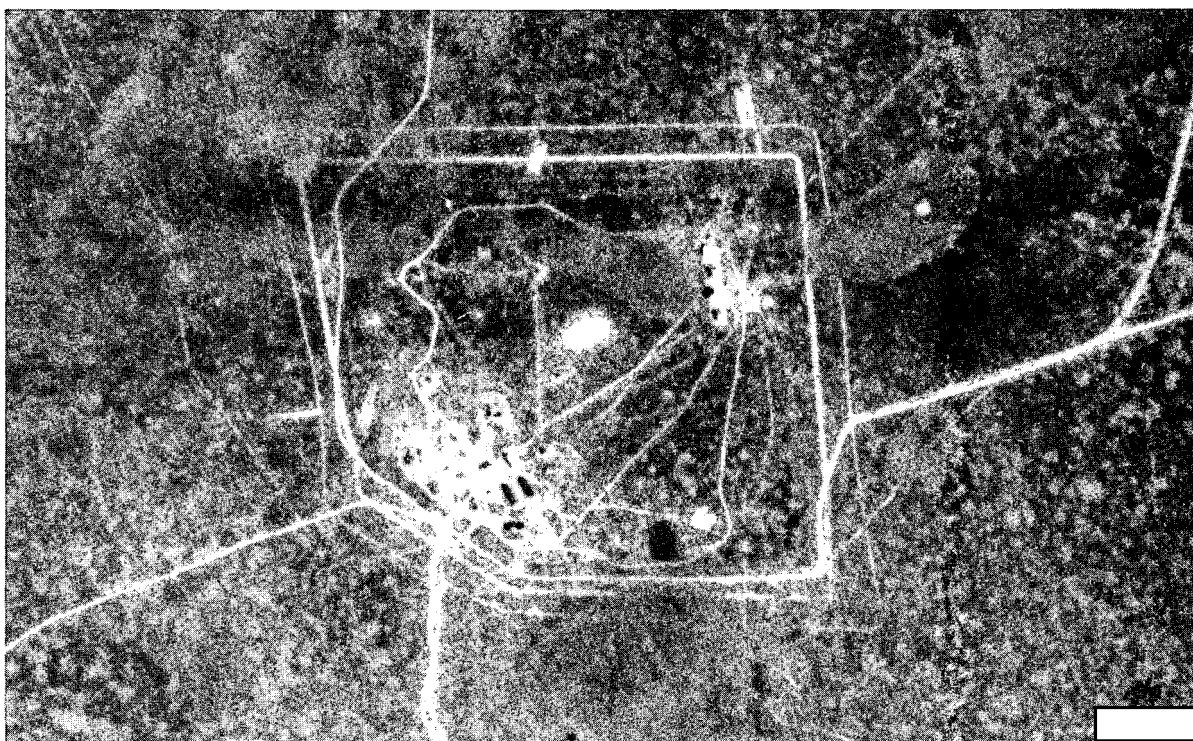
TYPE: Site 11
LOCATION: KY/VMTC

KY/VMTC INSTRUMENTATION SITE 11

(See Figure 14)

Site 11 (49-07-00N 45-42-00E) is somewhat less cluttered and hence more defined in appearance than Site 10. It contains possibly as many as 5 radar positions: a mounded position with a large radar of unidentified type (item 1), 2 slightly elevated positions occupied by smaller radars of unidentified type (items 2 and 3), and 2 other positions having possible radars (items 4 and 5). There are a large number of possible instrumentation/communications positions, including a hardstand occupied by unidentified equipment (item 6), an unoccupied probable hardstand (item 7), 2 possible instrumentation positions flanking a number of pieces of unidentified equipment (items 8 and 9), a probable instrumentation position (item 10), and a probable communications area (item 11) containing 4 buildings, and a number of vehicles/vans and unidentified equipment. A support area contains 10 to 12 buildings/structures and several pieces of unidentified equipment. The site has no apparent orientation. It cannot be negated on [redacted] photography and was first definitely observed in [redacted]

Map: DIA. USATC, Series 200, Sheet 0235-17HL, 3d ed, Apr 64 (S)



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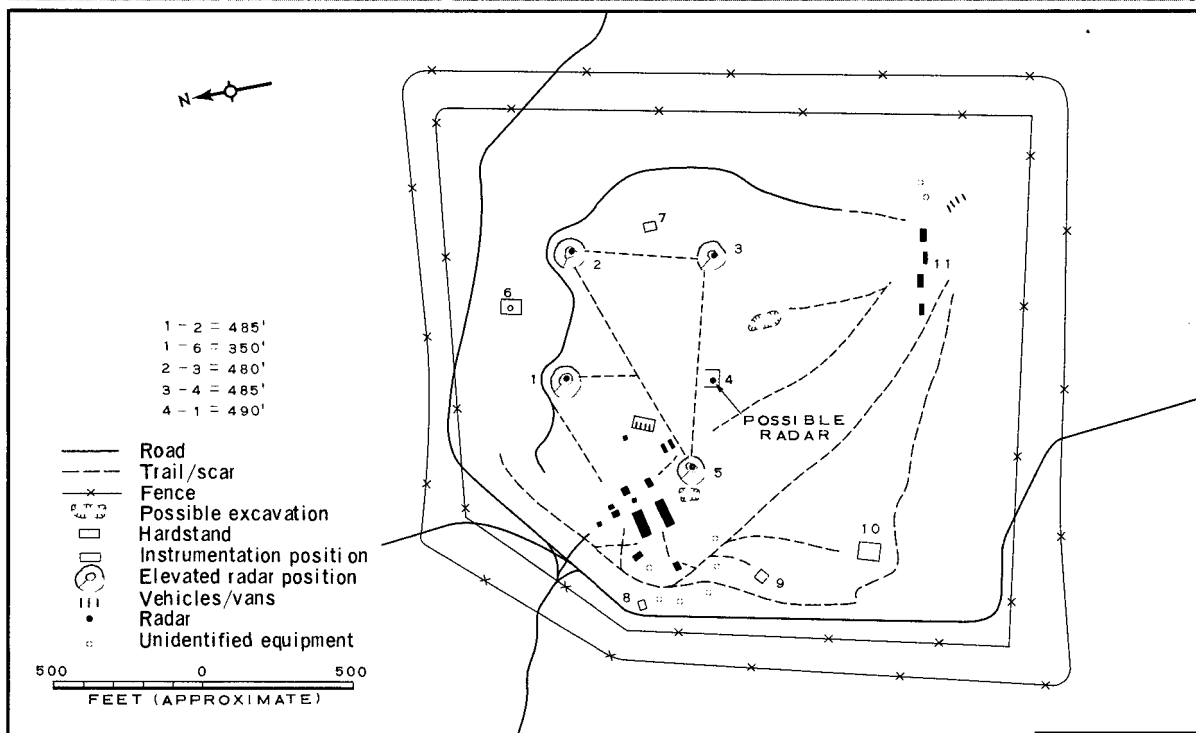


FIGURE 14. INSTRUMENTATION SITE 11.

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REFERENCES

DOCUMENT

1. NPIC. R-322/64, *H-Shaped Unidentified Installations, USSR*, May 64 (TOP SECRET)

REQUIREMENT

NSA. P0432/R4-65

NPIC PROJECT

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ADDENDUM

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On the latest photographic coverage available, that of [REDACTED] the following significant additions to this report were noted:

1. Two newly-identified conventional H-configured facilities are situated generally north of Leningrad at 60-50N 30-22E and at 61-23N 31-51E.

2. On large-scale photography of the Kamyshin facility, it has been noted that most

of the radars have been removed. Also, a pair of tower-mounted, probably new-type communications antennas were observed at instrumentation/communications positions (item 10, Figure 10).

3. On large-scale photography of the Gornyy Balykley facility, the previously noted radars now appear as 2 probable height finders and a tall, van-mounted antenna of an unidentified type.

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